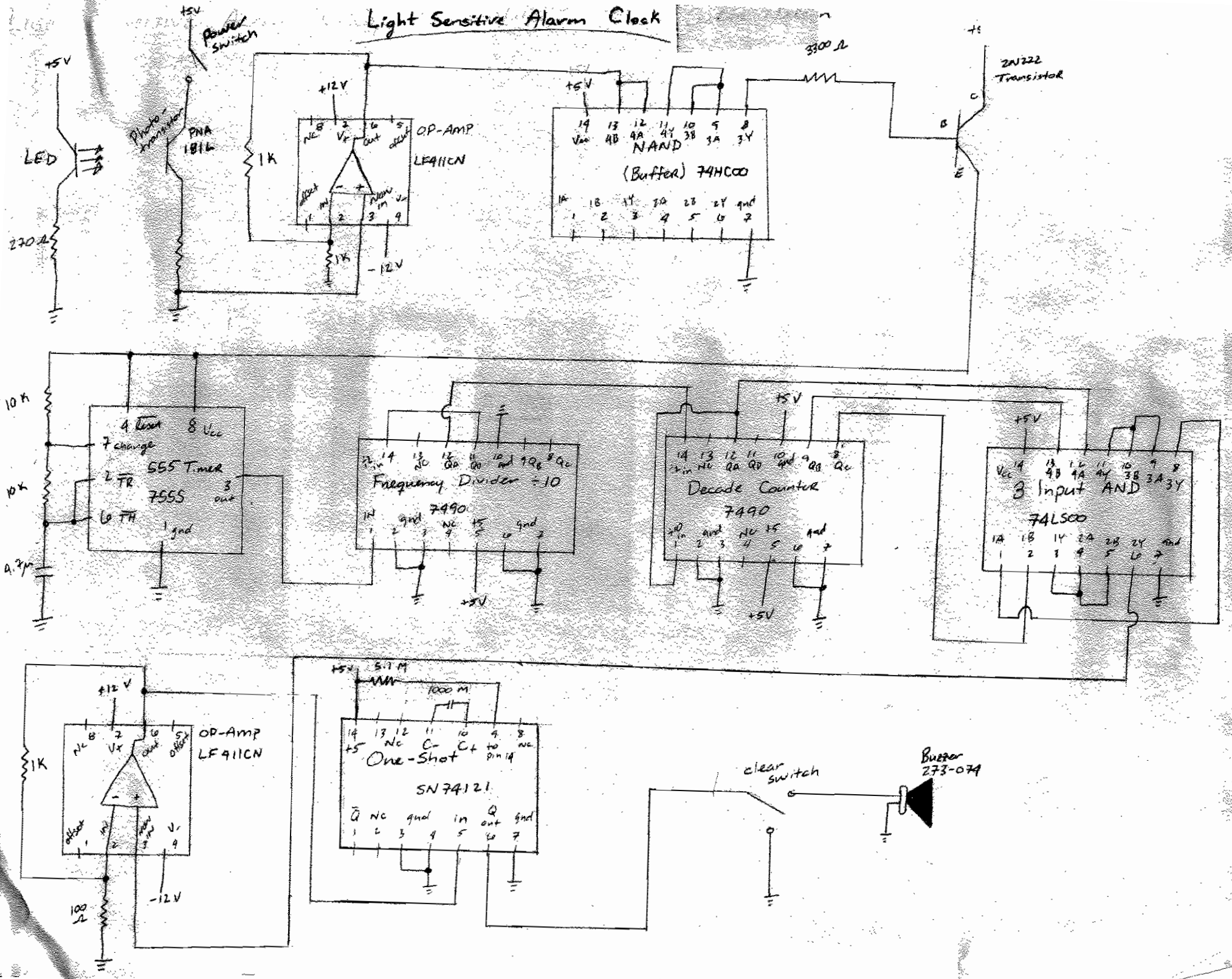


Light Sensitive Alarm Clock



Specifications

- 1) Duty cycle of 555 timer. (calculated)
- 2) Frequency from frequency divider $\div 10$. (calculated)
- 3) Period from 3-input AND. (measured)

1) High for 1.49 at $50.0 \frac{\text{ms}}{\text{div}} = 74.5 \pm 5 \text{ms}$
Low for 0.79 at $50.0 \frac{\text{ms}}{\text{div}} = 39.5 \pm 5 \text{ms}$

$$\text{Duty Cycle} = 100 \left(\frac{74.5}{74.5 + 39.5} \right) = 65.35 \pm 0.32\%$$

• Uncertainties determined from propagation of errors.

2) $\lambda = 2 \frac{1}{2} \text{ div at } 500 \text{ms/div} \Rightarrow T = 1 \frac{1}{2} \text{ s} \quad f = 0.91 \pm 0.04 \text{ Hz}$

• Uncertainties determined by oscilloscope's specifications.

3) $T = 11 \pm 0.9 \text{ s}$

• Uncertainties determined by manufacturer's specifications.